

Narumi NAKATO*: Notes on chromosomes of
Japanese pteridophytes (2)**

中藤成実*: 日本産シダ植物の染色体ノート (2)

16) *Angiopteris lygodiiifolia* Rosenst. (Fig. 1)

2n=80 (2x): Isl. Miyakejima, Tokyo Pref. (no. 493379¹⁾); Kuki, Mie Pref. (no. 493380); Isl. Yakushima, Kagoshima Pref. (no. 493381); Isl. Okinawajima, Okinawa Pref. (no. 493382). Previously reported as n=40(2x) from Taiwan (Tsai & Shieh 1983).

17) *Athyrium nikkoense* Makino (Fig. 2)

2n=78 (2x): Koshin-yama, Tochigi Pref. (nos. 493384-5). Previously reported as n=40 (2x) from Kogashi-san, Tochigi Pref. (Hirabayashi 1970). As the basic chromosome number of *Athyrium* is x=40, the plants examined are considered to be derived from aneuploidal reduction from 2n=80.

18) *Ctenitis iriomotensis* (H. Ito) Nakaike (Fig. 3)

2n=82 (2x): Isl. Iriomotejima, Okinawa Pref. (no. 493386). This species is endemic to Isl. Iriomotejima and is closely related to *C. eatoni* (Bak.) Ching distributed widely in east Asia, which was reported as diploid with n=41 (Mitui 1968, Shimura & Matsumoto 1976). There is no difference in chromosome number between these two species.

19) *Davallia mariesii* Moore ex Bak. (Figs. 4, 5)

2n=80 (2x): Agano, Saitama Pref. (no. 493377); Itsukaichi, Tokyo Pref. (no. 493371); Sawai, Tokyo Pref. (nos. 493372-4); Kosuge, Yamanashi Pref. (no. 493400); Owase, Mie Pref. (no. 493396); Nachi, Wakayama Pref. (no. 493397); Totsukawa, Nara Pref. (no. 493398); Asuka, Nara Pref. (no. 493399); Hino, Tottori Pref. (no. 493395).

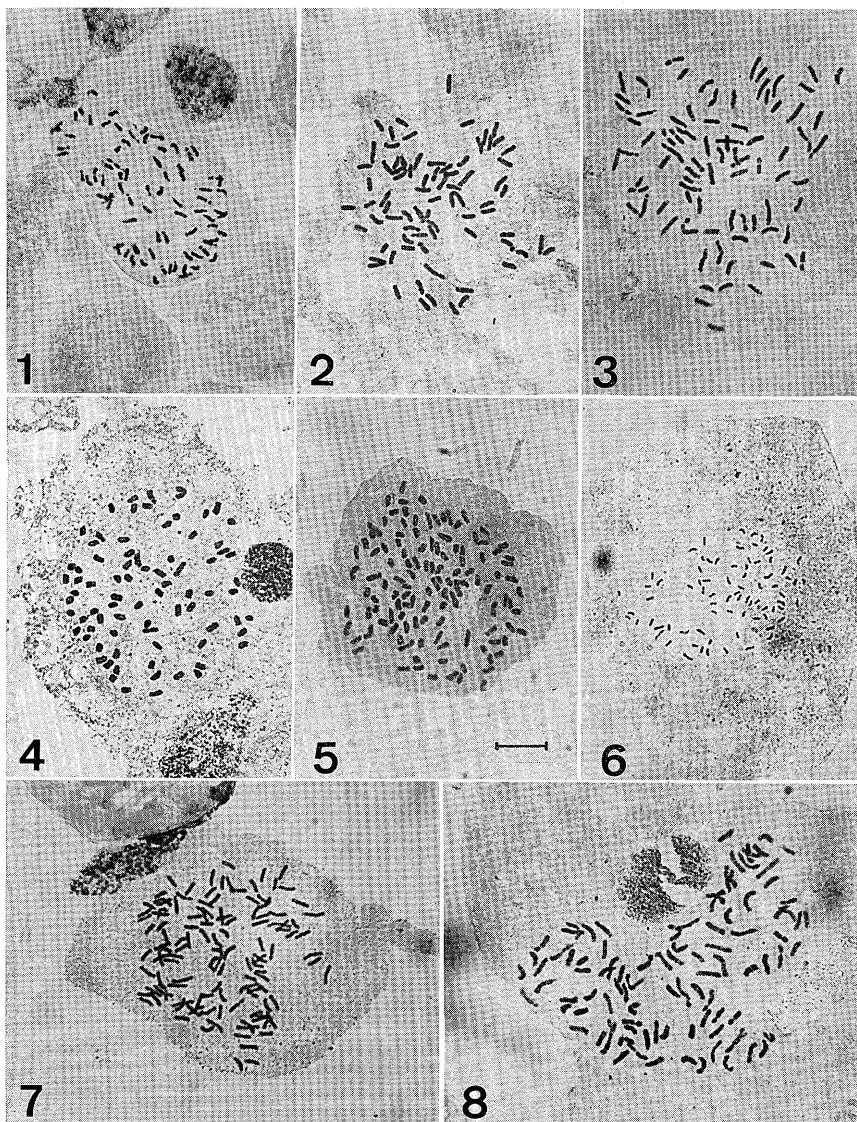
2n=120 (3x): Sawai, Tokyo Pref. (no. 493387).

Previously reported as n=40 (2x) from Taiwan (Chen 1969). The triploid plant from Sawai grew on a sunny stone wall and had several small sterile leaves. The diploid plants occurred abundantly on relatively shaded stone walls

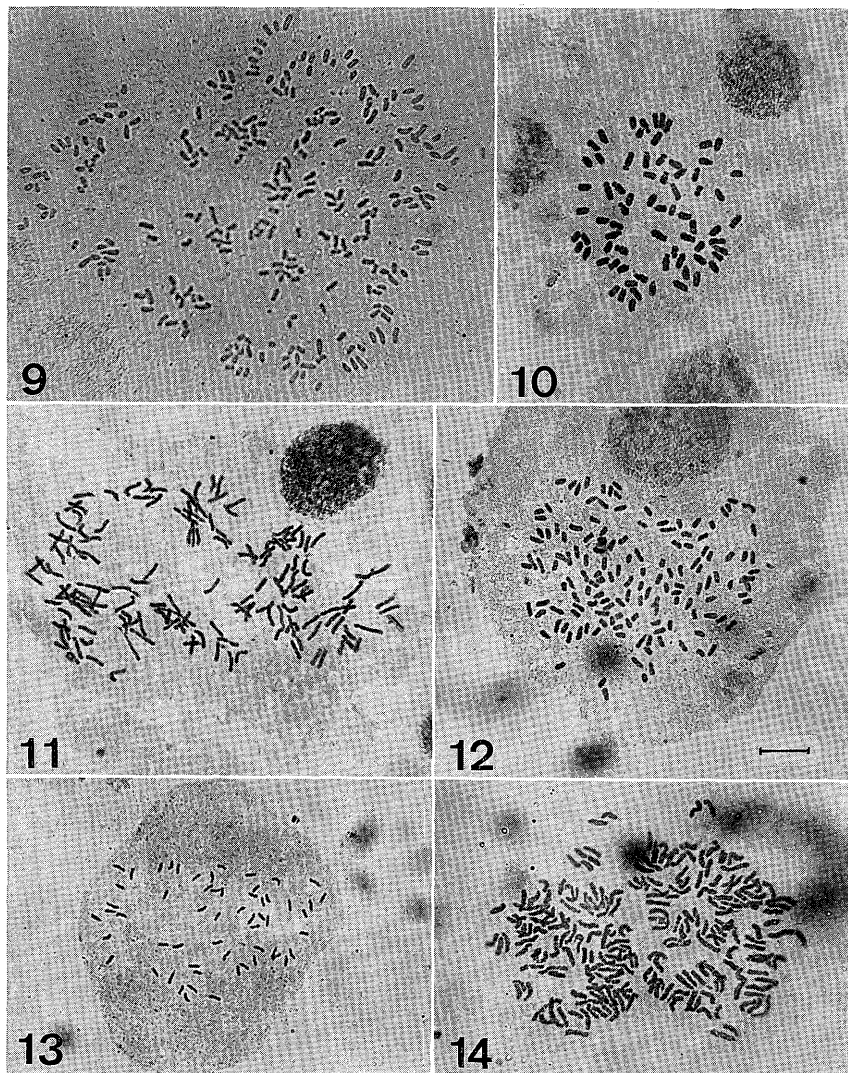
* Shinjuku High School, Sendagaya 6-2-1, Shibuya-ku, Tokyo 151. 東京都立新宿高等学校.

** Continued from Journ. Jap. Bot. 62: 261-267 (1987).

1) Specimen numbers are those in TNS.



Figs. 1-8. Photomicrographs of somatic chromosomes. 1. *Angiopteris lygodiifolia*, $2n=80$. 2. *Athyrium nikkoense*, $2n=78$. 3. *Ctenitis iriomotensis*, $2n=82$. 4. *Davallia mariesii*, $2n=80$. 5. *Davallia mariesii*, $2n=120$. 6. *Dicranopteris pedata*, $2n=78$. 7. *Diplazium donianum* var. *aphanoneuron*, $2n=123$. 8. *Lindsaea yaezamensis*, $2n=94$. Scale in fig. 5: $10\ \mu\text{m}$. All photographs are at the same magnification.



Figs. 9-14. Photomicrographs of somatic chromosomes. 9. *Plagiogyria rankanensis*, $2n=260$. 10. *Polypodium formosanum*, $2n=72$. 11. *Pronephrium liukiense*, $2n=144$. 12. *Pronephrium triphyllum* var. *parishii*, $2n=144$. 13. *Pteris kidoi*, $2n=58$. 14. *Vittaria anguste-elongata*, $2n=\text{ca } 210$. Scale in fig. 12: $10\ \mu\text{m}$. All photographs are at the same magnification.

and rocks near the triploid habitat. It is likely that the triploid was derived from crossing between a normal gamete and a unreduced one of diploids.

20) *Dicranopteris pedata* (Houtt.) Nakaike (Fig. 6)

$2n=78$ (2x): Ashikubo, Shizuoka Pref. (no. 470761). The chromosomes observed were very small, ranging 0.9–2.5 μm in length.

21) *Diplazium donianum* (Mett.) Tard.-Blot. var. *aphanoneuron* (Ohwi) Tagawa (Fig. 7)

$2n=123$ (3x): Isl. Yakushima, Kagoshima Pref. (no. 470762). In *D. donianum*, Roy & Holttum (1965) reported $2n=123$ (3x) from southern China and Mitui (1967) reported $n=164$ (apog. 4x) from Kagoshima Pref. The present triploid produced many abnormal spores.

22) *Lindsaea yaeyamensis* Tagawa (Fig. 8)

$2n=94$ (2x): Isl. Iriomotejima, Okinawa Pref. (no. 470763). The reproduction mode could not be ascertained.

23) *Plagiogyria rankanensis* Hayata (Fig. 9)

$2n=260$ (4x): Isl. Yakushima, Kagoshima Pref. (no. 470764). This species has the same chromosome number as the related Japanese species, *P. japonica* Nakai and *P. euphlebia* (Kunze) Mett. (Nakato & Mitui 1983).

24) *Polypodium formosanum* Bak. (Fig. 10)

$2n=72$ (2x): Isl. Yakushima, Kagoshima Pref. (no. 470756). Previously reported as $n=37$ (2x) from a cultivated plant (Mitui 1968) and $2n=72$ from Taiwan (Takei 1982).

25) *Pronephrium liukiense* (Christ ex Matsum.) Nakaike (Fig. 11)

$2n=144$ (4x): Isl. Iriomotejima, Okinawa Pref. (no. 470765).

26) *Pronephrium triphyllum* (Sw.) Holttum var. *parishii* (Bedd.) Nakaike (Fig. 12).

$2n=144$ (4x): Isl. Iriomotejima, Okinawa Pref. (no. 470766). Previously reported as $n=72$ (4x) from Taiwan (Tsai & Shieh 1975).

27) *Pteris kidoi* Kurata (Fig. 13)

$2n=58$ (2x): Taisho-do, Yamaguchi Pref. (no. 470759); Furen-do, Oita Pref. (no. 470760). Previously reported as $n=29$ (locality not shown) (Matsmoto 1976). As the present specimen produced 64 normal spores per sporangium, the reproduction mode is considered to be sexual.

28) *Vittaria anguste-elongata* Hayata (Fig. 14)

$2n=\text{ca } 210$ (7x): Isl. Iriomotejima, Okinawa Pref. (no. 493388). The

septaploid number shows that further studies are needed to clarify the origin of this species.

I am indebted to Dr. T. Nakaike for identification of the specimens and to Dr. K. Mitui for his valuable advices. Thanks are also due to Drs. S. Mitsuta and R. Yoroï and Messrs. H. Manago and A. Tanaka for providing materials.

References

- Chen, T.F. 1969. Quart. Journ. Chin. For. 2: 85-90. Hirabayashi, H. 1970. Journ. Jap. Bot. 45: 45-52. Matsumoto, S. 1976. Nippon Shida Gakkai Kaihou (Bull. Jap. Pter. Soc.) no. 46: 2-3. Mitui, K. 1967. Journ. Jap. Bot. 42: 105-110. — 1968. Sci. Rep. Tokyo Kyoiku Daigaku Sec. B. 203: 285-333. Nakato, N. & K. Mitui 1983. Journ. Jap. Bot. 58: 105-109. Roy, S.K. & R.E. Holttum 1965. Amer. Fern Journ. 55: 154-158. Shimura, Y. & S. Matsumoto 1976. The news of the tropical plants & animals no. 21: 2-4. Takei, M. 1982. Res. Bull. Fac. Educ. Oita Univ. 6: 1-21. Tsai, J.L. & W.C. Shieh 1975. Journ. Sci. Engineer. 12: 321-334. — 1983. ibid. 20: 137-159.

* * * *

シダ植物13種の染色体数を報告した。すなわち、16) リュウビンタイ、17) イワイヌワラビ、18) コミダケシダ、19) シノブ、20) コシダ、21) アツバキノボリシダ、22) トラノオホングウシダ、23) タカサゴキジノオ、24) タイワンアオネカズラ、25) オオコウモリシダ、26) ホソバコウモリシダ、27) キドイノモトソウ、28) ヒメシランである。メシダ属の染色体基本数は $X=40$ であるが、イワイヌワラビでは異数性の $2n=78$ が観察された。アツバキノボリシダは3倍体 ($2n=123$)、ヒメシランは7倍体 ($2n=ca\ 210$) であった。これらの起源を明らかにするためには、さらに多くの材料について調査が必要である。

□安田 健：江戸諸国産物帳 — 丹羽正伯の人と仕事 139 pp. 1987. 晶文社、東京。¥1900. さきに紹介した250年前の博物国勢調査、江戸諸国産物の解説と編纂者丹羽正伯についてのべたものである。いくつかの動物の諸国での呼び名の比較、カワウソ、トキ、オオカミの分布図などがあり、植物については桃、薩摩芋、孟宗竹などの産状が記されている。(金井弘夫)